



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
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May 4, 2011

Mr. Kevin Bronson
Site Vice President
Entergy Nuclear Northeast
James A. FitzPatrick Nuclear Power Plant
P. O. Box 110
Lycoming, NY 13093

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - NRC INTEGRATED
INSPECTION REPORT 05000333/2011002

Dear Mr. Bronson:

On March 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your James A. FitzPatrick Nuclear Power Plant (FitzPatrick). The enclosed inspection report documents the inspection results which were discussed on April 27, 2011, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, this report documents one NRC-identified finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because the issue is entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section 2.3.2 of the NRC's Enforcement Policy. If you contest this NCV, you should provide a response within 30 days of the date of the inspection report, with the basis for your denial, to the U. S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with a copy to the Regional Administrator, Region I; Office of Enforcement; U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Senior Resident Inspector at FitzPatrick. In addition, if you disagree with the cross-cutting aspect assigned to the finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the NRC Senior Resident Inspector at FitzPatrick.

K. Bronson

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In accordance with 10 CFR Part 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

A handwritten signature in black ink, appearing to read "Mel Gray", with a long, sweeping horizontal line extending to the right.

Mel Gray, Chief
Projects Branch 2
Division of Reactor Projects

Docket No.: 50-333
License No.: DPR-59

Enclosure: Inspection Report 05000333/2011002
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-333

License No.: DPR-59

Report No.: 05000333/2011002

Licensee: Entergy Nuclear Northeast (Entergy)

Facility: James A. FitzPatrick Nuclear Power Plant

Location: Scriba, New York

Dates: January 1 through March 31, 2011

Inspectors: E. Knutson, Senior Resident Inspector
S. Rutenkroger, PhD, Resident Inspector
K. Young, Senior Reactor Inspector

Approved by: Mel Gray, Chief
Projects Branch 2
Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000333/2011002; 01/01/2011 - 03/31/2011; James A. FitzPatrick Nuclear Power Plant; Identification and Resolution of Problems.

The report covered a three-month period of inspection by resident inspectors and an announced inspection by a region-based inspector. One Green finding, which was a non-cited violation, was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspect for the finding was determined using IMC 0310, "Components Within the Cross-Cutting Areas." Findings for which the SDP does not apply may be "Green" or be assigned a severity level after Nuclear Regulatory Commission (NRC) management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Mitigating Systems

Green: The inspectors identified a non-cited violation (NCV) of very low safety significance of 10 CFR 50, Criterion XVI, "Corrective Action," because Entergy personnel did not identify and correct a condition adverse to quality related to a control room envelope (CRE) boundary door. Specifically, Entergy personnel did not identify and implement adequate actions to ensure the safety-related CRE boundary door, 70DOR-A-300-5, remained latched and able to perform its safety function. As corrective action, the foreign material that prevented the door from consistently latching was removed by Entergy personnel. The issue was entered into the corrective action program (CAP) as condition reports CR-JAF-2010-08617 and CR-JAF-2011-00407.

The finding was more than minor because it was associated with the configuration control and the barrier performance attributes specific to the radiological barrier function of the control room. The finding affected the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. The finding was determined to be of very low safety significance in accordance with IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," based on a Phase 3 analysis. The inspectors determined the period that the door was potentially open was small relative to the technical specification (TS) allowed outage time, and therefore represented very low safety significance, considering the low probability of a design basis accident during that time period.

The finding had a cross-cutting aspect in the area of problem identification and resolution within the corrective action program component because Entergy personnel did not completely and accurately identify the degraded condition of the door (P.1(a) per IMC 0310). (Section 4OA2)

REPORT DETAILS

Summary of Plant Status

The James A. FitzPatrick Nuclear Power Plant (FitzPatrick) began the inspection period operating at 100 percent reactor power. On March 21, operators reduced reactor power to 55 percent for a control rod sequence exchange, single control rod scram time testing, to identify and plug main condenser tube leaks, and to repair a leak from the 'A' reactor feedwater pump. Operators restored reactor power to 100 percent on March 24. The plant continued to operate at or near full power for the remainder of the inspection period.

1. REACTOR SAFETY**Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**1R04 Equipment Alignment (71111.04).1 Quarterly Partial System Walkdown (71111.04Q - 4 samples)a. Inspection Scope

The inspectors performed four partial system walkdowns to verify the operability of redundant or diverse trains and components during periods of system train unavailability or following periods of maintenance. The inspectors referenced system procedures, the updated final safety analysis report (UFSAR), and system drawings in order to verify the alignment of the available train was proper to support its required safety functions. The inspectors also reviewed applicable condition reports (CRs) and work orders (WOs) to ensure that Entergy personnel identified and properly addressed equipment discrepancies that could impair the capability of the available equipment train, as required by Title 10, Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion XVI, "Corrective Action." The documents reviewed are listed in the Attachment. The inspectors performed a partial walkdown of the following systems:

- 'A' residual heat removal service water (RHRSW) when 'B' RHRSW was out of service for maintenance;
- Reactor core isolation cooling (RCIC) when high pressure coolant injection (HPCI) was unavailable due to surveillance testing;
- 'A' standby liquid control (SLC) while 'B' SLC was out of service for maintenance; and
- 'B' emergency service water (ESW) while 'A' ESW was out of service for maintenance.

These activities constituted four partial system walkdown inspection samples.

b. Findings

No findings were identified.

.2 Complete System Walkdown (71111.04S - 1 sample)

a. Inspection Scope

The inspectors performed a complete system alignment inspection of the HPCI system to identify discrepancies between the existing equipment lineup and the required lineup. During the inspection, system drawings and operating procedures were used to verify proper equipment alignment and operational status. The inspectors reviewed the open maintenance WOs associated with the system for deficiencies that could affect the ability of the system to perform its function. Documentation associated with unresolved design issues such as temporary modifications, operator workarounds, and items tracked by plant engineering were also reviewed by the inspectors to assess their collective impact on system operation. In addition, the inspectors reviewed the corrective action program (CAP) database to verify that equipment problems were being identified and appropriately resolved. The documents reviewed are listed in the Attachment.

These activities constituted one complete system walkdown inspection sample.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Review (71111.05Q - 5 samples)

a. Inspection Scope

The inspectors conducted inspections of fire areas to assess the material condition and operational status of fire protection features. The inspectors verified, consistent with applicable administrative procedures, that combustibles and ignition sources were adequately controlled; passive fire barriers, manual fire-fighting equipment, and suppression and detection equipment were appropriately maintained; and compensatory measures for out-of-service, degraded, or inoperable fire protection equipment were implemented in accordance with FitzPatrick's fire protection program. The inspectors evaluated the fire protection program for conformance with the requirements of license condition 2.C(3), "Fire Protection." The documents reviewed are listed in the Attachment.

- Turbine building miscellaneous oil storage room, fire area/zone IE/OR-3;
- Reactor building (RB) 272 foot elevation, fire area/zone IX/RB-1A, X/RB-1B;
- RB 300 foot elevation, fire area/zone VIII/RB-1C, IX/RB-1A, X/RB1B;
- East cable tunnel, fire area/zone II/CT-2; and
- Crescent area - west, fire area/zone XVIII/RB-1W.

These activities constituted five quarterly fire protection inspection samples.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06 - 1 sample)

a. Inspection Scope

The inspectors conducted tours of the relay room to assess internal flooding protection measures in that area. The inspectors reviewed selected risk significant plant design features intended to protect the associated safety-related equipment from internal flooding events. The inspectors reviewed flood analysis and design documents, including the Individual Plant Examination and UFSAR.

These activities constituted one internal flood protection measures inspection sample.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11Q - 1 sample)

a. Inspection Scope

On March 7, the inspectors observed licensed operator simulator training to assess operator performance during a scenario to verify that crew performance was adequate and evaluators were identifying and documenting crew performance problems. The inspectors evaluated the performance of risk significant operator actions, including the use of emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operation and manipulation, and the oversight and direction provided by the shift manager. Licensed operator training was evaluated for conformance with the requirements of 10 CFR Part 55, "Operators' Licenses." The documents reviewed are listed in the Attachment.

These activities constituted one quarterly operator simulator training inspection sample.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q - 2 samples)

a. Inspection Scope

The inspectors reviewed performance-based problems involving selected in-scope structures, systems, or components (SSCs) to assess the effectiveness of the maintenance program. The reviews focused on the following aspects when applicable:

- Proper maintenance rule scoping in accordance with 10 CFR 50.65;
- Characterization of reliability issues;
- Changing system and component unavailability;
- 10 CFR 50.65 (a)(1) and (a)(2) classifications;
- Identifying and addressing common cause failures;
- Appropriateness of performance criteria for SSCs classified (a)(2); and
- Adequacy of goals and corrective actions for SSCs classified (a)(1).

The inspectors reviewed system health reports, maintenance backlogs, and Maintenance Rule basis documents. The documents reviewed are listed in the Attachment. The following systems were selected for review.

- High pressure coolant injection system; and
- Automatic depressurization system.

These activities constituted two quarterly maintenance effectiveness inspection samples.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 - 5 samples)

a. Inspection Scope

The inspectors reviewed maintenance activities to verify that the appropriate risk assessments were performed prior to removing equipment for work. The inspectors reviewed whether risk assessments were performed as required by 10 CFR 50.65(a)(4), and were accurate and complete. When emergent work was performed, the inspectors reviewed whether plant risk was promptly reassessed and managed. The documents reviewed are listed in the Attachment. The reviews focused on the following activities:

- The week of January 3, that included turbine valve testing, RCIC system quarterly surveillance testing, chemical cleaning of safety related unit coolers in the west crescent room, and emergent maintenance to troubleshoot failure of the RCIC steam admission valve, 13MOV-131, to fully open on demand.
- The week of January 31, that included 'A' and 'C' emergency diesel generator (EDG) monthly surveillance testing, 'A' residual heat removal (RHR) system quarterly surveillance testing, and emergent maintenance to correct a malfunctioning computer position indication for the 'A' to 'C' EDG cross-tie breaker, 71-10504.
- The week of February 14, that included 'B' and 'D' EDG monthly surveillance testing, 'B' standby gas treatment system maintenance, 'B' station battery ventilation subsystem maintenance, 'B' RHR and RHRSW systems quarterly surveillance testing, and emergent maintenance to troubleshoot an unexpected two percent reduction in 'B' average power range monitor (APRM) indication.

- The week of February 28, that included 'A' and 'C' EDG monthly surveillance testing, adjustment of the reactor power high limiter for the 'A' reactor water recirculation motor-generator, 'A' SLC system quarterly surveillance testing, 'A' core spray system quarterly surveillance testing, and maintenance on the 'A' battery room ventilation system.
- The week of March 21, that included single control rod scram time testing, repair of a leak from the 'A' reactor feedwater pump, torus-to-drywell vacuum breaker quarterly surveillance testing, and troubleshooting to isolate a main generator field electrical ground.

These activities constituted five maintenance risk assessments and emergent work control inspection samples.

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15 - 5 samples)

a. Inspection Scope

The inspectors reviewed operability determinations to assess the acceptability of the evaluations; the use and control of applicable compensatory measures; and compliance with technical specifications (TSs). The inspectors' reviews included verification that the operability determinations were conducted as specified by EN-OP-104, "Operability Determination Process." The technical adequacy of the determinations was reviewed and compared to the TSs, UFSAR, and associated design basis documents (DBDs). The inspection focused on the following operability reviews:

- CR-JAF-2011-00747 concerning a temperature indicating switch, 92TIS-101A, associated with the 'A' EDG that was maintaining the room temperature at 90 degrees Fahrenheit;
- CR-JAF-2011-00432 concerning the 'C' main steam line radiation monitor, 17RM-251C, with regard to TS-required channel check surveillance and irregular (spiking) indication;
- CR-JAF-2011-00923 concerning the 'B' APRM subsequent to a two percent drop in indicated level that had occurred in association with a power supply replacement for 'A' APRM;
- CR-JAF-2011-00968 concerning the potential effect of a loss of temperature monitoring capability for control rod drive 46-19 on the insertion time for that control rod; and
- CR-JAF-2011-01230 concerning the effect of the 'A' reactor water recirculation motor-generator high speed mechanical stop position with regard to core flow limitations consistent with core operating limits report (COLR) assumptions with respect to core thermal limits.

These activities constituted five operability evaluation inspection samples.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 - 2 samples)

a. Inspection Scope

The inspectors assessed the adequacy of the 10 CFR 50.59 evaluations for the following temporary and permanent modifications respectively. The inspectors' reviews considered whether the installations were consistent with the modification documentation, that the drawings and procedures were updated as applicable, and that the post-installation testing was adequate. The following reviews represented one temporary modification inspection sample and one permanent modification inspection sample:

- Temporary modification of the 'A' battery room ventilation system for operation with supply fan 72AHU-30A inoperable, in accordance with OP-59A, "Battery Room Ventilation;" and
- EC 14122, "Modification to Improve SRV [safety/relief valve] Reliability - Replace 02RV-71C, -71E, and -71F with Target Rock Three-Stage Safety/Relief Valves."

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 - 6 samples)

a. Inspection Scope

The inspectors reviewed post-maintenance test procedures and associated testing activities for selected risk-significant mitigating systems to assess whether the effect of maintenance on plant systems was adequately addressed by control room and engineering personnel. The inspectors verified whether test acceptance criteria were clear, demonstrated operational readiness, and were consistent with DBDs; test instrumentation had current calibrations, adequate range, and accuracy for the application; and tests were performed, as written, with applicable prerequisites satisfied. Upon completion, the inspectors verified whether equipment was returned to the proper alignment necessary to perform its safety function. Post-maintenance testing (PMT) was evaluated for conformance with the requirements of 10 CFR 50, Appendix B, Criterion XI, "Test Control." The documents reviewed are listed in the Attachment. PMT activities associated with the following work orders were reviewed:

- WO 00228000, preventive maintenance on the 'A' standby gas treatment system;
- WO 00260774, replacement of 52STA, stationary auxiliary switch, within the 71-10504 cubicle, associated with the tie breaker of the 'A' and 'C' EDGs;
- WO 52189872, replacement of relay 03A-K50 within the 09-28 panel, associated with rod sequence control logic;
- WO 52189878, replacement of relay 03A-K60 within the 09-28 panel, associated with a group notch control insert block;

- WO 52192021-01, replacement of reactor protection system B1 logic relay 05A-K104B; and
- WO 00271482-01, replacement a section of piping in the west crescent service water supply to 'E' and 'G' unit coolers due to a pinhole leak.

These activities constituted six PMT inspection samples.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 - 6 samples)

a. Inspection Scope

The inspectors witnessed performance of surveillance tests (STs) and/or reviewed test data of selected risk-significant SSCs to assess whether the SSCs satisfied TSs, UFSAR, technical requirements manual (TRM), and station procedure requirements. The inspectors reviewed whether test acceptance criteria were clear, demonstrated operational readiness, and were consistent with DBDs; test instrumentation had current calibrations, adequate range, and accuracy for the application; and tests were performed, as written, with applicable prerequisites satisfied. Upon ST completion, the inspectors verified that equipment was returned to the status specified to perform its safety function. The following STs were reviewed:

- ST-9BB, "EDG B and D Full Load Test and ESW Pump Operability Test," Revision 11;
- ST-9AA, "EDG System A Fuel/Lube Oil Monthly Test," Revision 2;
- ST-9AB, "EDG System B Fuel Oil Monthly Test," Revision 2;
- ST-4N, "HPCI Quick-Start, Inservice, and Transient Monitoring Test (IST) [inservice test]," Revision 59;
- ST-2AM, "RHR Loop B Quarterly Operability Test (IST)," Revision 29; and
- ST-3PB, "Core Spray Loop B Quarterly Operability Test (IST)," Revision 19.

These activities represented six surveillance testing inspection samples.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (71152 - 1 sample)

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," to identify repetitive equipment failures or specific human performance issues for follow-

up, the inspectors performed a daily screening of all items entered into Entergy's CAP. The review was accomplished by accessing Entergy's computerized database for CRs and attending CR screening meetings. In accordance with the baseline inspection procedures, the inspectors selected items across the Initiating Events, Mitigating Systems, Barrier Integrity, and Public Radiation Safety cornerstones for additional follow-up and review. The inspectors assessed Entergy personnel's threshold for problem identification, the adequacy of the cause analyses, and extent of condition review, operability determinations, and the timeliness of the specified corrective actions. The CRs reviewed are listed in the Attachment.

b. Findings and Observations

Introduction: The inspectors identified an NCV of very low safety significance of 10 CFR 50, Criterion XVI, "Corrective Action," because Entergy personnel did not identify and correct a condition adverse to quality related to a control room envelope (CRE) boundary door. Specifically, Entergy personnel did not identify and implement adequate actions to ensure the safety-related CRE boundary door, 70DOR-A-300-5, remained latched and able to perform its safety function.

Description: During a system walkdown performed by Entergy personnel on December 29, 2010, a system engineer identified door 70DOR-A-300-5, a CRE boundary door between the control room chiller room and the control room heating, ventilation, and air conditioning (HVAC) room, to be open and unlatched. The individual closed and latched door 70DOR-A-300-5 and initiated CR-JAF-2010-08617. In addition, the engineer documented within the condition report that the door seemed to require more force to shut than normal. After performing the daily review of condition reports the following day, on December 30, 2010, the inspectors performed a walkdown and identified door 70DOR-A-300-5 unlatched and slightly ajar. After discovering the door unlatched and ajar, the inspectors verified no Entergy personnel were in the two rooms associated with door 70DOR-A-300-5, closed and latched the door, and notified control room personnel of the deficiency.

Entergy personnel screened CR-JAF-2010-08617 to the significance level 'D - Actions Taken' and closed the CR on January 13, 2011, with closure remarks stating that door 70DOR-A-300-5 was secured closed and the Shift Manager was notified. The inspectors concluded it would have been reasonable to more thoroughly investigate the physical condition of the door at that time, given that there were two separate instances in which door 70DOR-A-300-5 had been identified as unlatched.

On January 21, 2011, the inspectors identified door 70DOR-A-300-5 unlatched a third time and noted that the door would, although visually appearing to be fully latched, intermittently fail to automatically latch and require more manual force to close than normal. Entergy personnel inspected door 70DOR-A-300-5 and identified a piece of metal foreign material protruding from the bottom of the door between laminate layers, which was intermittently catching upon the ramped door sill and interfering with free closure of the door. Entergy personnel determined that the foreign material was most likely a remnant of the door shell that had fallen inside the door when a hole saw was used to bore the holes for the installation of door knobs on May 12, 2009, a corrective action associated with a prior NRC finding documented in inspection report 05000333/2009-002.

In order for the control room emergency ventilation air system (CREVAS) subsystems to be considered operable, the CRE boundary must be maintained such that the CRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analyses for design basis accidents, and that CRE occupants are protected from hazardous chemicals and smoke. Door 70DOR-A-300-5 must be closed and latched in order to maintain these conditions. Although procedure AP-19.18, "Control Room Envelope Habitability Program," allows intermittent opening of the CRE boundary under administrative controls, as permitted by a note included in TS 3.7.3, the door's condition in this case was not controlled and its state was unknown and unreliable.

Entergy's corrective actions included removing the foreign material and initiating condition reports CR-JAF-2010-08617 and CR-JAF-2011-00407.

Analysis: There was an NRC-identified performance deficiency in that Entergy personnel did not promptly identify and correct a condition adverse to quality associated with CRE boundary door 70DOR-A-300-5. The finding was more than minor because it was associated with the configuration control and the barrier performance attributes specific to the radiological barrier function of the control room. The finding affected the Barrier Integrity cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events.

The finding was evaluated using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP) Phase I and screened to a SDP Phase 3 review because the finding represented a degradation of the barrier function provided for the control room against toxic atmosphere and smoke, as well as radiological conditions. Based on senior risk analyst review, the finding was determined to be of very low safety significance (Green) because the amount of time the door was unlatched and ajar was limited to 24 days. The mitigating actions immediately required by action statement B.1 are required by B.2 to be verified within 24 hours to ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits. In addition, action B.3 to restore the CRE boundary to operable status has a required completion time of 90 days. Therefore, considering the allowed outage time of 90 days, the maximum potential time of 24 days during which this condition existed, coupled with the low probability of a design basis accident during this time period, results in very low safety significance.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution within the corrective action program component because Entergy personnel did not completely and accurately identify the degraded condition of the door (P.1(a) per IMC 0310).

Enforcement: 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that, "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected." Contrary to the above, between December 29, 2010, and January 21, 2011, Entergy personnel did not promptly identify and correct a condition adverse to quality associated with a malfunction of CRE boundary door 70DOR-A-300-5. This resulted in short periods of time where the CRE boundary was inoperable. Entergy took corrective actions to

remove interfering foreign material to improve the reliability of the door closure function. Because this violation was of very low safety significance and was entered into the CAP as CR-JAF-2011-00407, this violation is being treated as an NCV, consistent with the NRC Enforcement Policy. **(NCV 05000333/2011002-01: Control Room Envelope Inoperable due to Unlatched Boundary Door)**

.2 Annual Sample: Review of Continued Operability of Lighthouse Hill Substation 115 kV Offsite Power Line 3 (1 sample)

a. Inspection Scope

The inspectors selected CR-JAF-2005-00109 as a problem identification and resolution sample for a detailed follow-up review. This CR documented Entergy personnel's review regarding whether the TRM may not have correctly reflected the plant licensing basis regarding the 115 kV systems as of January 11, 2005. Offsite power to FitzPatrick is supplied directly by Lighthouse Hill substation 115 kV line 3, and indirectly by South Oswego substation 115 kV line 1 via Nine Mile Point - FitzPatrick tie line 4. A loss of line 1 or 4 would require the Lighthouse Hill 115 kV line 3 to independently power both reserve station service transformers (RSSTs) and their safety and house loads at FitzPatrick. However, under certain grid loading conditions with line 1 or 4 unavailable, line 3 alone may not provide adequate voltage. This CR was initiated by Entergy personnel to determine operability of the Lighthouse Hill 115 kV offsite power line, concurrent with the loss of line 1 or 4, to ensure that voltage would stay within the motor starting capability of FitzPatrick's 115 kV and 4 kV electric systems. Additionally, Entergy personnel initiated corrective actions to revise the necessary documents to ensure operation of the line was consistent with the TS requirements and to make modifications to FitzPatrick as necessary. This CR was initiated after an issue was identified on January 10, 2005 (documented in CR-JAF-2005-00089), which determined that the plant had continued to operate on a single 115 kV offsite supply line (line 3) for greater than the TS-allowed maximum of seven days, as documented in NRC inspection report 05000333/2004-005. FitzPatrick personnel performed several operability evaluations (CR-JAF-2005-00109) and determined that, through current operator practices, power monitoring actions, and load limitations, FitzPatrick 115 kV offsite circuits are capable of supplying all engineered safeguard loads and performing their intended functions in any configuration until long term corrective actions are completed.

The inspectors assessed Entergy's problem identification threshold, apparent cause evaluation (ACE), extent of condition reviews, operability evaluations, and the prioritization and timeliness of corrective actions to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with the identified issues and whether the planned or completed corrective actions were appropriate to prevent recurrence. Additionally, the inspectors performed walkdowns of accessible portions of the 115 kV system and components to assess if abnormal conditions existed. The inspectors also interviewed plant personnel regarding the identified issues and implemented or planned corrective actions. The documents reviewed are listed in the Attachment.

b. Findings and Observations

No findings were identified. The inspectors determined that Entergy personnel properly implemented their CAP regarding the issue. The CR packages were complete and

included an ACE, operability evaluations, extent of condition reviews, use of operating experience, and contained implemented and planned corrective actions. Additionally, the elements of the CRs, ACE, and operability evaluations were detailed and thorough. Implemented and planned corrective actions by Entergy personnel were appropriate to minimize the potential of recurrence.

The inspectors noted that corrective actions included revising the TS bases to revise the definition of qualified offsite circuits to include the 115 kV lines, revoking the appropriate TRM section for 115 kV lines being inoperable, and initiating CR-JAF-2005-00109 to perform operability evaluations of the 115 kV lines ability to supply adequate power to operate safeguards equipment and house loads when the South Oswego substation/Nine Mile Point Unit 1 power source lines 1 or 4 are out-of-service. The inspectors determined the additional corrective actions included performing several operability evaluations and engineering evaluations to ensure the offsite power capabilities without lines 1 or 4 were adequate to supply power for a loss of coolant accident; implementing an operating shift standing order to perform monitoring of the 115 kV transmission system; establishing communication protocols between Nine Mile Point Unit 1, FitzPatrick, and the grid operator when a 115 kV line is out of service; revising the post contingency voltage alarm set-point from 112.5 kV to 112.0 kV (subsequently revised to 112.8 kV by further analysis in CR-JAF-2010-03421) to maintain adequate voltage at the 4.16 kV emergency buses; and revising operations procedures to operate the 115 kV system within the licensing and design bases.

The inspectors concluded that FitzPatrick personnel had conducted adequate operability evaluations, implemented appropriate agreements with grid operators and had adequate operations procedures in place to provide proper monitoring, evaluation, and response for the 115 kV offsite power systems as issues occur. The inspectors determined these actions appear adequate to ensure that the 115 kV offsite power lines remain capable of performing their safety function under the various scenarios analyzed.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153 - 1 sample)

.1 (Closed) LER 05000333/2010005-00, High Pressure Coolant Injection System Declared Inoperable due to Power Supply Degradation

On October 23, 2010, Entergy personnel identified a condition that could have prevented the fulfillment of the safety function of the HPCI system, a system needed to remove residual heat. Entergy staff noticed an acrid odor within the control room which was determined to be emanating from 23INV-79, the HPCI instrument power inverter. Entergy staff also noted that the casing of 23INV-79 had a spot of discoloration from apparent localized overheating. Based on these indications, Entergy personnel declared the HPCI system inoperable and implemented an engineering change to replace the degraded inverter, a Topaz Electronics Model N250-GWR-125-60-115, with one of new design.

Entergy personnel performed a visual inspection of the removed inverter's internal components and noted heat and smoke damage associated with a transformer internal to the device. Based on the degraded material condition, Entergy staff considered the inverter to not be capable of performing its safety function at the time of discovery. The degraded inverter was supplied to FitzPatrick in February 1973 and had been refurbished and reinstalled in the plant on October 10, 2010. According to Electric

Power Research Institute EL-5036, Volume 2, "Power Transformers," the typical life expectancy of an energized and loaded transformer is between 30 and 40 years. However, transformers are generally considered beyond the usual scope of items replaced during preventive maintenance refurbishments.

The significance of the condition was mitigated by the fact that the automatic depressurization, low pressure coolant injection, core spray, and RCIC systems were available. Corrective actions documented in CR-JAF-2010-07341 included implementing a design change and replacing 23INV-79 with a new model and initiating work orders to replace the remaining Topaz Electronics Model N250-GWR-125-60-115 inverters installed in the plant with the new design. No violation of regulatory requirements occurred and no findings were identified. This LER is closed.

4OA6 Meetings, Including Exit

Exit Meeting Summary

The inspectors presented the inspection results to Mr. B. Sullivan and other members of Entergy's management at the conclusion of the inspection on April 27, 2011. The inspectors asked Entergy personnel whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified by Entergy's personnel.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION**KEY POINTS OF CONTACT****Entergy Personnel**

K. Bronson, Site Vice President
B. Sullivan, General Manager, Plant Operations
M. Woodby, Director, Engineering
B. Finn, Director, Nuclear Safety Assurance
C. Adner, Manager, Operations
J. LaPlante, Manager, Security
J. Barnes, Manager, Training and Development
T. Raymond, Manager, Project Management
M. Reno, Manager, Maintenance
C. Brown, Manager, Quality Assurance, Entergy
P. Cullinan, Manager, Emergency Preparedness
V. Bacanskas, Manager, Design Engineering
D. Poulin, Manager, System Engineering
P. Scanlan, Manager, Programs and Components Engineering
J. Pechacek, Manager, Licensing
E. Wolf, Manager, Radiation Protection

LIST OF ITEMS OPEN, CLOSED, AND DISCUSSED**Opened and Closed**

05000333/2011002-01	NCV	Control Room Envelope Inoperable due to Unlatched Boundary Door
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Closed

05000333/2010005-00	LER	High Pressure Coolant Injection System Declared Inoperable due to Power Supply Degradation
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Discussed

None

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Procedures:

AP-17.02, "Housekeeping and Cleanliness Control," Revision 18
OP-17, "Standby Liquid Control System," Revision 48
OP-21, "Emergency Service Water (ESW)," Revision 37
OP-15, "High Pressure Coolant Injection," Revision 57

Documents:

DBD-023, "Design Basis Document for the High Pressure Coolant Injection System," Revision 11

Section 1R05: Fire Protection

Procedures:

PFP-PWR15, "Crescent Area - West/Elev. 227', 242 Fire Area/Zone XVIII/RB-1W," Revision 3
PFP-PWR47, "Foam & Miscellaneous Oil Storage Rooms/Elev. 272' Fire Area/Zone IE/OR-3, FP-2," Revision 1
PFP-PWR20, "Reactor Building - East/Elev. 272' Fire Area/Zone IX/RB-1A," Revision 4
PFP-PWR21, "Reactor Building - West/Elev. 272' Fire Area/Zone X/RB-1," Revision 4
PFP-PWR24, "Reactor Building - East/Elev. 300' Fire Area/Zone IX/RB-1A, VIII/RB-1C," Revision 4
PFP-PWR25, "Reactor Building - West/Elev. 300' Fire Area/Zone X/RB-1B, VIII/RB-1C," Revision 3

Documents:

JAF-RPT-04-00478, "JAF Fire Hazards Analysis," Revision 2
JAF Safe Shutdown Analysis Report, Revision 1

Section 1R06: Flood Protection Measures

Procedures:

AOP-51, "Unexpected Fire Pump Start," Revision 5
AOP-43, "Shutdown from Outside the Control Room," Revision 34

Documents:

JAF-RPT-MULTI-02107, "Individual Plant Examination," Revision 1

Section 1R11: Licensed Operator Regualification Program

Procedures:

AOP-42, "Feedwater Malfunction (Lowering Feedwater Flow)," Revision 12
AOP-28, "Operation During Plant Fires," Revision 18
AOP-1, "Reactor Scram," Revision 43
EOP-2, "RPV Control," Revision 9

Section 1R12: Maintenance EffectivenessProcedures:

EN-DC-205, "Maintenance Rule Monitoring," Revision 2

OP-15, "High Pressure Coolant Injection," Revision 57

Documents:

DBD-023, "Design Basis Document for the High Pressure Coolant Injection System," Revision 11

JAF-RPT-HPCI-02289, "Maintenance Rule Basis Document System 23 High Pressure Coolant Injection System," Revision 6

System Health Report, 23 High Pressure Coolant Injection, 3rd quarter 2010

List of Risk Significant Systems, Structures, and Components based on 2010 PSA Update

JAF-RPT-07-00030, "Maintenance Rule Basis Document / System 02-ADS0 / Automatic Depressurization System," Revision 2

EN-DC-204, "Maintenance Rule Scope and Basis," Revision 2

ADS System Health Report for Third Quarter 2010

SRV Leakage Status, dated January 20, 2011

JENG-01-0135, "Assessment of Corrective Actions for Safety Relief Valve Setpoint Drift," dated March 20, 2001

Condition Reports:

CR-JAF-2008-00537	CR-JAF-2009-00285	CR-JAF-2009-01122
CR-JAF-2008-01309	CR-JAF-2009-00286	CR-JAF-2007-02937
CR-JAF-2008-03193	CR-JAF-2009-00350	CR-JAF-2010-00188
CR-JAF-2008-03231	CR-JAF-2009-00382	CR-JAF-2010-00209
CR-JAF-2008-04718	CR-JAF-2009-00384	CR-JAF-2010-01138
CR-JAF-2009-00200	CR-JAF-2009-01265	CR-JAF-2010-03083
CR-JAF-2009-00206	CR-JAF-2009-01398	CR-JAF-2010-05585
CR-JAF-2009-00211	CR-JAF-2009-01407	CR-JAF-2010-07077
CR-JAF-2009-00212	CR-JAF-2009-03055	CR-JAF-2010-07095
CR-JAF-2009-00230	CR-JAF-2009-03073	CR-JAF-2010-07202
CR-JAF-2009-00243	CR-JAF-2009-04256	CR-JAF-2010-07341
CR-JAF-2009-00267	CR-JAF-2010-04721	CR-JAF-2010-07348
CR-JAF-2009-00284	CR-JAF-2010-07379	CR-JAF-2010-07491
CR-JAF-2010-07707		
CR-JAF-2010-08267		
CR-JAF-2011-00132		
CR-JAF-2011-00511		

Section 1R13: Maintenance Risk Assessments and Emergent Work ControlProcedures:

AP-05.13, "Maintenance During LCOs," Revision 9

AP-10.10, "On-Line Risk Assessment," Revision 6

AP-12.12, "Protected Equipment Program," Revision 9

EN-WM-104, "On Line Risk Assessment," Revision 2

Section 1R15: Operability Evaluations

Procedures:

EN-OP-104, "Operability Determination Process," Revision 5
EN-DC-126, "Engineering Calculation Process," Revision 4
EN-LI-102, "Corrective Action Process," Revision 16
ENN-IC-G-003, "Instrument Loop Accuracy and Setpoint Calculation Methodology," Revision 0

Documents:

JAF-CALC-09-00002, "4 KV Emergency Bus Degraded Voltage Time Delay Relay Uncertainty and Set-point Calculation," Revision 1

Condition Reports:

CR-JAF-2011-00270
CR-JAF-2010-06303

Section 1R18: Plant Modifications

Procedures:

EN-DC-136, "Temporary Modifications," Revision 5
EN-DC-115, "Engineering Change Process," Revision 10
EN-DC-117, "Post Modification Testing and Special Instructions," Revision 3
EN-LI-100, "Process Applicability Determination," Revision 10

Documents:

EC 14122, "Modification to Improve SRV Reliability - Replace 02RV-71C, -71E, and 71F with Target Rock Three-Stage Safety/Relief Valves (Model 0867F)," Revision 0
EC 14122 Post Modification Test Plan
EC 14122 10 CFR 50.59 Screen

Section 1R19: Post Maintenance Testing

Procedures:

IS-E-07, "Installation of Electrical Cable Terminations," Revision 13
MP-054.02, "4.16 kV Bus and Metal-Clad Switchgear Maintenance," Revision 14
ST-9BA, "EDG A and C Full Load Test and ESW Pump Operability Test," Revision 12
ST-34A, "PCIS Group 2 Logic Functional and Simulated Automatic Actuation Test," Revision 51
ST-34B, "Reactor Building Exhaust Rad Monitors Instrument/Logic System Functional and Simulated Automatic Actuation Test," Revision 41
ISP-100B-RPS, "RPS Instrument Functional Test/Calibration (ATTS)**," Revision 34

Documents:

ST-9BA-110131-52306164

Condition Reports:

CR-JAF-2011-01273
CR-JAF-2011-01274

Section 4OA2: Identification and Resolution of ProblemsChange Requests:

04-044, FSAR Change Request, "Define qualified Offsite Circuits as Required by TS," dated February 3, 2005

05-001, TRM Change Request, "Delete TRM 3.8.C and corresponding bases based on the addition of transmission lines #3 and #4 to the TS," dated January 14, 2005

05-001, TS Bases Change Request, "Revise TS Bases 3.8.1 to add 115 kV transmission lines #3 and #4 to be part of the TS Qualified offsite circuits," dated January 14, 2005

Completed Surveillance Procedures:

TST-129, "Post LOCA/Loss of Line #3/#4 Contingency Voltage Verification," Revision 0, completed April 11, 2005

Drawings:

FE-1B, Main Line Diagram Station Service Transformers, Revision 13

Niagara Mohawk Operating Diagram, Electrical System Interconnection, Revision 2

Engineering Changes:

EC 12703, "Replacement of Reserve Station Service Transformers 71T-2 and 71T-3," Revision 0

EC 12703, "Post Modification Test Plan for RSST Replacement," Revision 0

Engineering Evaluations:

ER JAF-04-13240, "Qualify 345 kV Backfeed to Satisfy TS Req. Remove 115 kV from Service," dated July 29, 2004

JAF-RPT-ELEC-04344, "115 kV Offsite Power Line Grid Voltage Regulation Study," Revision 2

Condition Reports:

CR-JAF-2005-00089
CR-JAF-2005-00109
CR-JAF-2010-03421
CR-JAF-2010-08617
CR-JAF-2011-00072
CR-JAF-2011-00086
CR-JAF-2011-00114
CR-JAF-2011-00140
CR-JAF-2011-00179
CR-JAF-2011-00407
CR-JAF-2011-00410
CR-JAF-2011-00432

CR-JAF-2011-00463
CR-JAF-2011-00479
CR-JAF-2011-00511
CR-JAF-2011-00575
CR-JAF-2011-00596
CR-JAF-2011-00603
CR-JAF-2011-00696
CR-JAF-2011-00711
CR-JAF-2011-00756
CR-JAF-2011-00791
CR-JAF-2011-00863
CR-JAF-2011-00923

CR-JAF-2011-00930
CR-JAF-2011-00939
CR-JAF-2011-00968
CR-JAF-2011-01121
CR-JAF-2011-01147
CR-JAF-2011-01255
CR-JAF-2011-01256
CR-JAF-2011-01351
CR-JAF-2011-01439
CR-JAF-2011-01510
CR-JAF-2011-01596

LIST OF ACRONYMS

ACE	apparent cause evaluation
ADAMS	Agencywide Documents Access and Management System
APRM	average power range monitor
CAP	corrective action program
CFR	Code of Federal Regulations
COLR	core operating limits report
CR	condition report
CRE	control room envelope
CREVAS	control room envelope ventilation air system
DBD	design basis document
EDG	emergency diesel generator
Entergy	Entergy Nuclear Northeast
ESW	emergency service water
FitzPatrick	James A. FitzPatrick Nuclear Power Plant
HPCI	high pressure coolant injection
HVAC	heating, ventilation, and air conditioning
IMC	inspection manual chapter
IST	inservice test
kV	kilovolt
LER	licensee event report
NCV	non-cited violation
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Record
PMT	post-maintenance testing
RB	reactor building
RCIC	reactor core isolation cooling
RHR	residual heat removal
RHRSW	residual heat removal service water
RSST	reserve station service transformer
SDP	significance determination process
SLC	standby liquid control
SRV	safety/relief valve
SSC	structure, system, or component
ST	surveillance test
TRM	technical requirements manual
TS	technical specification
UFSAR	updated final safety analysis report
WO	work order